Baton Rouge Community College

Academic Affairs Master Syllabus

Date Approved or Revised: July 28, 2008

Course name: Organic Chemistry I

Course Number: CHEM 220

Lecture Hrs. 3 Lab Hrs. 0 Credit Hrs. 3

Course Description: Introduces fundamental principles and theories of organic chemistry and representative classes of organic compounds including nomenclature, reaction types and mechanisms. Designed for science majors and students in nursing, health science, and engineering.

Prerequisites: CHEM 102, CHEM 102L
Co-requisites: Chemistry 220 L

Suggested Enrollment Cap: 30

Learning Outcomes: Upon successful completion of this course, the student will be able to:

- Recognize the occurrence, manufacture, and use of organic compounds in society;
- Apply the rules of organic nomenclature to naming simple organic compounds including those containing most functional groups;
- Demonstrate an understanding of organic structure-property relationships, molecular symmetry and chirality and their influence on organic reactions;
- Recognize the most important classes of organic compounds and predict their course of reactions;
- Demonstrate an understanding of the basic principles of the molecular orbital theory as it applies to organic compounds;
- Recognize and employ the principles of instrumental techniques of organic analysis in the interpretation of simple structural spectral data.

Assessment Measures: Instructors may use a variety of assessment measures to assess student performance. But, the following assessments will be used in all sections:

- Individual instructor-designed exams will collectively assess all of the learning outcomes and will be administered during the semester as listed in the course syllabus;

- An individual instructor and collaborative departmentally-designed comprehensive final exam, adhering to a department-determined content;
- Individual Instructor-designed or collaborative instructor-designed assignments will be given as a portion of the total grade and will include written and oral assignments, projects, homework, and quizzes; all assignments will be graded using an instructor-designed rubric.

Information to be included on the Instructors' Course Syllabi:

- ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.

- ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor's and/or the department's policy for make-up work. For example in a speech course, "Speeches not given on due date will receive no grade higher than a sixty" or "Make-up work will not be accepted after the last day of class."

- ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.

- ***General Policies*:** Instructors' policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.

- ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.

- ***Safety Concerns:*** In some programs this may be a major issue. For example, "No student will be allowed in the safety lab without safety glasses." General statements such as, "Items that may be harmful to one's self or others should not be brought to class."

- ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

Expanded Course Outline:

I. Introduction and Review
   - A. Covalent Bonding and Molecular Orbital Theory
   - B. Acids and Bases

II. Structure and Properties of Organic Molecules
   - A. Alkanes and Cylcoalkanes
   - B. Alkenes and Alkynes
   - C. Haloalkanes
   - D. Chirality

III. Aromatic Compounds
   - A. Benzene and Aromatic Compounds
   - B. Spectroscopy

IV. Organic Compounds Containing Oxygen
   - A. Alcohols and Ethers
   - B. Aldehydes and Ketones
   - C. Carboxylic Acids and Acid Derivatives

V. Organic Compounds Containing Nitrogen
   - A. Amines
   - B. Properties and characteristic reactions

VI. Carbohydrates and Lipids

VII. Nucleic Acids
   - A. Amino Acids and Proteins
   - B. Nucleic Acids and DNA